

Amendments to the Claims

The listing of claims below will replace all prior versions and listings of claims in the present application.

Claim Listing

1 1. (Original) A method for initializing a node in a network, the network
2 including a plurality of nodes connected by first and second rings formed by two or more
3 transmission media, the method comprising:

4 connecting the node to each of the first and second rings;
5 setting a locally significant ring identifier for each of the first and second rings
6 without concern for the ring identifier established by any other node in the
7 network for either of the two rings;
8 discovering the locally significant ring identifiers for each other node coupled to
9 the network;
10 storing the locally significant ring identifiers and associated node addresses for
11 each node in the network; and
12 determining routing decisions for one or more packets received at the node along
13 each of the first and second rings using the locally significant identifiers
14 associated with a node that sent the packets.

1 2. (Original) The method of claim 1, wherein the step of storing further
2 comprises storing the locally significant ring identifiers and associated node addresses for
3 each ring in a table.

1 3. (Original) The method of claim 2, wherein step of discovering the locally
2 significant ring identifiers includes
3 generating a topology packet including the locally significant identifier for a ring
4 and the address of the node and sending the topology packet to a next node
5 in the network;

6 receiving a topology packet back on the ring that includes an address for each
7 node on the network coupled to the ring including a locally significant
8 identifier for the ring for each node; and
9 storing the locally significant identifier for the ring for each node.

1 4. (Original) A method for initializing a node in a network, the network
2 including a plurality of nodes connected by first and second rings formed by two or more
3 transmission media, the method comprising:
4 connecting the node to each of the first and second rings;
5 determining a ring identifier for each of the first and second rings coupled to the
6 node after connection;
7 discovering topology information for the network including the identity of each
8 node coupled to each ring;
9 storing the topology information; and
10 determining routing decisions for one or more packets received at the node along
11 each of the first and second rings using the ring identifier information.

1 5. (Original) The method of claim 4, wherein the process of determining a ring
2 identifier for each of the first and second rings includes
3 generating a ring query packet that includes a proposed ring identifier for one
4 ring;
5 forwarding the ring query packet to a next node on the one ring; and
6 waiting for a response that includes information for determining a correct ring
7 identifier for the one ring.

1 6. (Original) The method of claim 5, wherein the step of waiting for a response
2 includes
3 if a broadcast identifier is received that indicates an identity for one of the first or
4 second rings, then assigning ring identifiers for the node in accordance
5 with the broadcast identifier.

1 7. (Original) The method of claim 5, wherein the step of waiting for a response
2 includes if the ring query packet is returned on the one ring,
3 setting the ring identifier for the one ring to the proposed ring identifier,
4 setting a ring identifier for a second one of the first and second rings to a
5 complementary value, and
6 broadcasting the ring identifier on the one ring.

1 8. (Original) The method of claim 5, wherein the step of waiting for a response
2 includes receiving a response from another node on the network that includes an
3 indication of a correct ring identifier for the one ring and setting the ring identifier for the
4 one ring to the correct ring identifier.

1 9. (Original) The method of claim 5, wherein the step of waiting for a response
2 includes receiving a ring query packet on the one ring from another node;
3 evaluating the received ring query packet to determine if the query should be
4 forwarded on the one ring; and
5 if the received ring query packet is to be forwarded, waiting for a broadcast
6 identifier indicating a correct ring identifier for the one ring.

1 10. (Original) The method of claim 9, wherein the step of evaluating includes
2 comparing the addresses of the node that generated the received ring query packet and the
3 node,
4 determining which node, among the node that generated the received ring query
5 and the node, should set the ring identifier for the one ring, and
6 if the node is to set the ring identifier for the one ring, then dropping without
7 forwarding the received ring query packet else forwarding the received
8 ring query packet to a next node on the one ring.

1 11. (Original) The method of claim 10, wherein the step of determining includes
2 selecting a node with the highest MAC address.

1 12. (Original) The method of claim 10, wherein the step of determining includes
2 selecting a node with the lowest MAC address.

1 13. (Original) The method of claim 4, wherein the step of determining a ring
2 identifier for each of the first and second rings coupled to the node after connection
3 includes

4 setting a locally significant ring identifier for each of the first and second rings
5 without concern for the ring identifier established by any other node in the
6 network for either of the two rings;
7 discovering the locally significant ring identifiers for each other node coupled to
8 the network and
9 storing the locally significant ring identifiers and associated node addresses for
10 each node in the network; and
11 where the determining step includes determining routing decisions for one or
12 more packets received at the node along each of the first and second rings
13 using the locally significant identifiers associated with a node that sent the
14 packets.

1 14. (Original) The method of claim 13, wherein the step of storing further
2 comprises storing the locally significant ring identifiers and associated node addresses for
3 each ring in a table.

1 15. (Original) The method of claim 14, wherein the step of discovering the
2 locally significant ring identifiers includes
3 generating a topology packet including the locally significant identifier for a ring
4 and the address of the node and sending the topology packet to a next node
5 in the network;
6 receiving a topology packet back on the ring that includes an address for each
7 node on the network coupled to the ring including a locally significant
8 identifier for the ring for each node; and
9 storing the locally significant identifier for the ring for each node.

1 16. (Currently Amended) A method for initializing a node in a network, the
2 network including a plurality of nodes connected by first and second rings formed by two
3 or more transmission media, the method comprising:
4 connecting the node to each of the first and second rings;
5 determining a ring identifier for each of the first and second rings coupled to the
6 node after connection ~~including~~;
7 generating a ring query packet that includes a proposed ring identifier for one
8 node;
9 forwarding the ring query packet to a next node on the one ring; and
10 waiting for a response that includes information for determining a correct ring
11 identifier for the one ring; and
12 determining routing decisions for one or more packets received at the node along
13 each of the first and second rings using the ring identifier information.

1 17. (Original) The method of claim 16, wherein the step of waiting for a
2 response includes
3 if a broadcast identifier is received that indicates an identity for one of the first or
4 second rings, then assigning ring identifiers for the node in accordance
5 with the broadcast identifier.

1 18. (Original) The method of claim 16, wherein the step of waiting for a
2 response includes
3 if the ring query packet is returned on the one ring,
4 setting the ring identifier for the one ring to the proposed ring identifier,
5 setting a ring identifier for a second one of the first and second rings to a
6 complementary value, and
7 broadcasting the ring identifier on the one ring.

1 19. (Original) The method of claim 16, wherein the step of waiting for a
2 response includes receiving a response from another node on the network that includes an

3 indication of a correct ring identifier for the one ring and setting the ring identifier for the
4 one ring to the correct ring identifier.

1 20. (Original) The method of claim 16, wherein the step of waiting for a
2 response includes

3 receiving a ring query packet on the one ring from another node;
4 evaluating the received ring query packet to determine if the query should be
5 forwarded on the one ring; and
6 if the received ring query packet is to be forwarded, waiting for a broadcast
7 identifier indicating a correct ring identifier for the one ring.

1 21. (Original) The method of claim 20, wherein the step of evaluating includes
2 comparing the addresses of the node that generated the received ring query packet
3 and the node,
4 determining which node, among the node that generated the received ring query
5 and the node, should set the ring identifier for the one ring, and
6 if the node is to set the ring identifier for the one ring, then dropping without
7 forwarding the received ring query packet else forwarding the received
8 ring query packet to a next node on the one ring.

1 22. (Original) The method of claim 21, wherein the step of determining includes
2 selecting a node with the highest MAC address.

1 23. (Original) The method of claim 21, wherein the step of determining includes
2 selecting a node with the lowest MAC address.

1 24. (Currently Amended) A computer readable medium storing a program for
2 initializing a node in a network, the network including a plurality of nodes connected by
3 first and second rings formed by two or more transmission media, the computer program
4 including instructions for causing a computer to:
5 connect a node to each of the first and second rings;

6 set a locally significant ring identifier for each of the first and second rings
7 without concern for the ring identifier established by any other node in the
8 network for either of the two rings;
9 discover the locally significant ring identifiers for each other node coupled to the
10 network;
11 store the locally significant ring identifiers and associated node addresses for each
12 node in the network; and
13 determine routing decisions for one or more packets received at the node along
14 each of the first and second rings using the locally significant identifiers
15 associated with a node that sent the packets.

1 25. (Currently Amended) A computer readable medium storing a program for
2 initializing a node in a network, the network including a plurality of nodes connected by
3 first and second rings formed by two or more transmission media, the program including
4 instructions for causing a computer to:
5 connect the node to each of the first and second rings;
6 determine a ring identifier for each of the first and second rings coupled to the
7 node after connection;
8 discover topology information for the network including the identity of each node
9 coupled to each ring;
10 store the topology information; and
11 determine routing decisions for one or more packets received at the node along
12 each of the first and second rings using the ring identifier information.

1 26. (Currently Amended) A computer readable medium storing a program for
2 initializing a node in a network, the network including a plurality of nodes connected by
3 first and second rings formed by two or more transmission media, the program including
4 instructions for causing a computer to:
5 connect the node to each of the first and second rings;
6 determine a ring identifier for each of the first and second rings coupled to the
7 node after connection including;

8 generating a ring query packet that includes a proposed ring identifier for one
9 node;
10 forwarding the ring query packet to a next node on the one ring; and
11 waiting for a response that includes information for determining a correct ring
12 identifier for the one ring; and
13 determine routing decisions for one or more packets received at the node along
14 each of the first and second rings using the ring identifier information.

1 27. (Original) A node in a network, the network including a plurality of nodes
2 connected by first and second rings formed by two or more transmission media, the node
3 comprising:
4 an interface for connecting the node to each of the first and second rings;
5 means for setting a locally significant ring identifier for each of the first and
6 second rings without concern for the ring identifier established by any
7 other node in the network for either of the two rings;
8 means for discovering the locally significant ring identifiers for each other node
9 coupled to the network;
10 a memory for storing the locally significant ring identifiers and associated node
11 addresses for each node in the network; and
12 logic for determining routing decisions for one or more packets received at the
13 node along each of the first and second rings using the locally significant
14 identifiers associated with a node that sent the packets.

1 28. (Original) A node in a network, the network including a plurality of nodes
2 connected by first and second rings formed by two or more transmission media, the node
3 comprising:
4 an interface for connecting the node to each of the first and second rings;
5 means for determining a ring identifier for each of the first and second rings
6 coupled to the node after connection;
7 means for discovering topology information for the network including the identity
8 of each node coupled to each ring;

9 a memory for storing the topology information; and
10 logic for determining routing decisions for one or more packets received at the
11 node along each of the first and second rings using the ring identifier
12 information.